Customer Code : _____

DATASHEET

DAPU P/N: **O22S-B319-20.00MHz-A**

Customer P/N: _____

Oscillators Type: **OCXO**

DAPU			Customer Approval
Drew	Audited	Approved	
Anway.wei	Carry.Wang	James Liu	
Date: 2016.08.03			Stamp, please! Thanks!

Guangdong Dapu Telecom Technology Co.,Ltd

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2016.08.03

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1、Electrical Parameters

MODEL：O22S-B319-20.00MHz-A						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency		20.00		MHz	
	Output Waveform		HCMOS			
	Output Low Voltage			0.4	V	V_{cc}=3.3V, O_{load}=15pF
	Output High Voltage	2.4			V	V_{cc}=3.3V, O_{load}=15pF
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			10	ns	
	Load		15		pF	
	Spurious Suppression			-70	dBc	
	Jitter			1	ps	RMS(12KHz~10MHz)
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-3		+3	$\times 10^{-9}$	T_A varied from -40℃ to 85℃, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$, V_{cc}=3.3V, O_{load}=15pF, temperature variable speed less than 2℃per minute.
	Initial Frequency Tolerance	-0.2		+0.2	$\times 10^{-6}$	Measurement referenced to frequency observed with T_A=25℃, V_{cc}=3.3V, and after 15 minutes of operation, within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-1		+1	$\times 10^{-9}$	measurement referenced to frequency observed T_A=25℃, V_{cc} varied from 3.13V to 3.47V, and O_{Load}= 15pF.
	Frequency Tolerance vs. Load	-1		+1	$\times 10^{-9}$	5% load change measurement referenced to frequency observed with T_A= 25℃, V_{cc}=3.3V, O_{Load}= 15pF.
	Short-Term Stability Allan Variance			0.01	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference，test after power for 1hour ref. to 25℃; 1s , using PN9000 equipment.
	Aging Tolerance Per Day	-1		+1	$\times 10^{-9}$	V_{cc}, T_A constant measurement referenced to frequency observed with T_A=25℃, V_{cc}= 3.3V, and after 30 days of operation.
	Aging Tolerance 30 Days	-0.03		+0.03	$\times 10^{-6}$	
	Aging Tolerance 1 Year	-0.1		+0.1	$\times 10^{-6}$	
	Aging Tolerance 10 Years	-0.8		+0.8	$\times 10^{-6}$	
	Aging Tolerance 20 Years	-1.5		+1.5	$\times 10^{-6}$	

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	Frequency Accuracy	-4.6		+4.6	$\times 10^{-6}$	Per GR-1244 Str. 3, Fig. 3-1. Inclusive of temperature, supply voltage variation ±5%, load variation ±5%, reflow soldering and ageing 20 years, referenced to the nominal frequency.
	Holdover Stability 24hr	-6		+6	$\times 10^{-9}$	Per GR-1244 Str. 3, Fig. 5-2, Var. temp, per GR-63 Table 4-4 (airflow must be stated), Referenced to (Fmax + Fmin)/2. Ref .temp range -40℃~70℃
	Overall Stability	-4.6		+4.6	$\times 10^{-6}$	Inclusive of the following: - operating temperature -40℃ to 85℃ - 3.3V±5% - 15pF load ±5% - 2 times reflow soldering - 20 years aging reference to nominal frequency
	Stratum 3E compliant per GR-1244-CORE teleconcordia					
Power Supply	Supply Voltage	3.13	3.3	3.47	V	
	Steady Consumption			400	mA	@25℃
	Warm-Up Time			5	minutes	@25℃within ±0.1×10^{-6} of final frequency with reference after 1 hour on.
	Warm up current			1000	mA	
Phase Noise	Phase Noise @25℃		-80	-70	dBc/Hz	1Hz
			-120	-110		10Hz
			-140	-130		100Hz
			-145	-140		1KHz
			-150	-145		10KHz
			-150	-145		100KHz
Environmental Conditions	Operable Temperature	-40		+85	℃	
	Storage Temperature	-55		+105	℃	
	ESD Level	Human Body Model,class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010.				
		Machine Model, class B: 200V to 400V; ANSI/ESDA/JEDEC JS-001-2010.				
	Moisture Sensitivity Level	Level 2.				
	Vibration	Test Condition: 0.75mm ;acceleration:10g;10Hz～500Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X ,Y , Z), IEC 68-2-06 Test Fc.				
	Shock	50g; 11ms; half sine wave (3 times for each 3 directions X ,Y, Z),IEC 68-2-27 Test Ea/Severity 50A.				
Full Package Storage	Relative humidity (%)	20%～70%				
	Temperature (℃)	-10~35℃				

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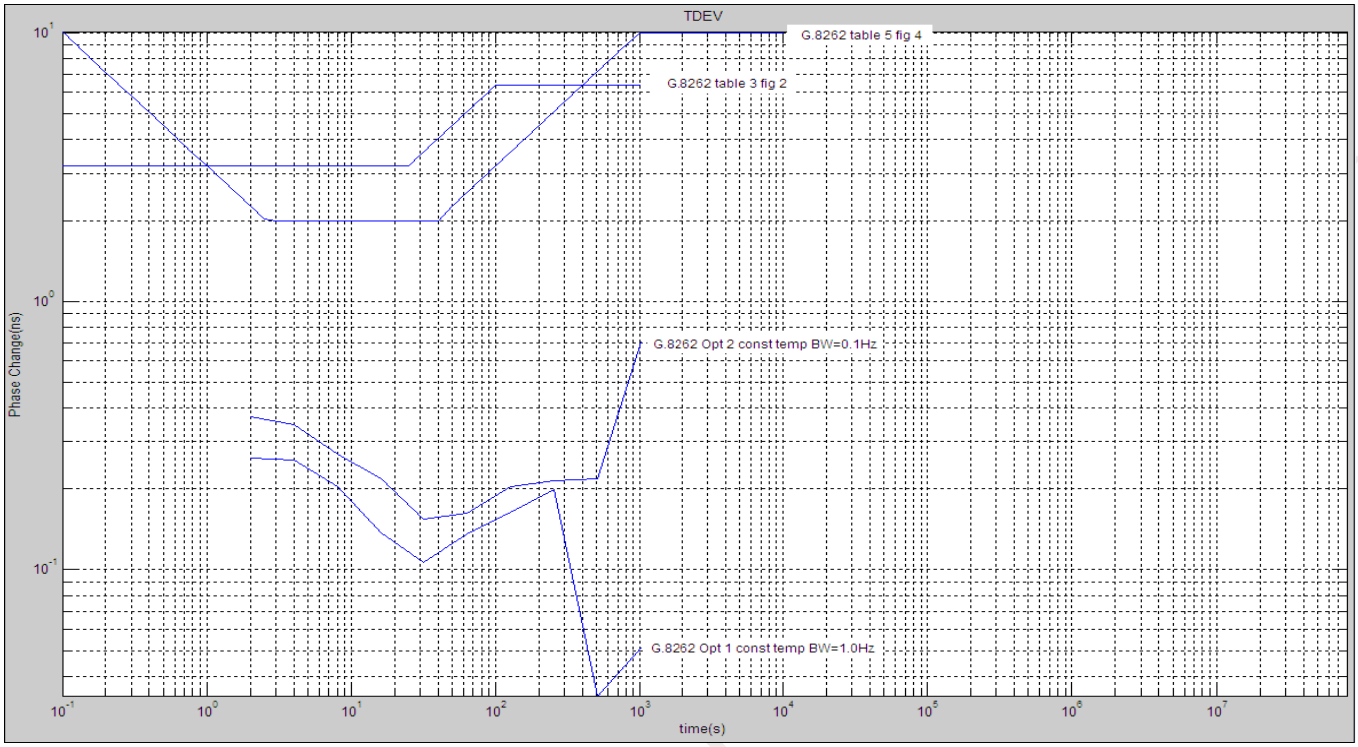
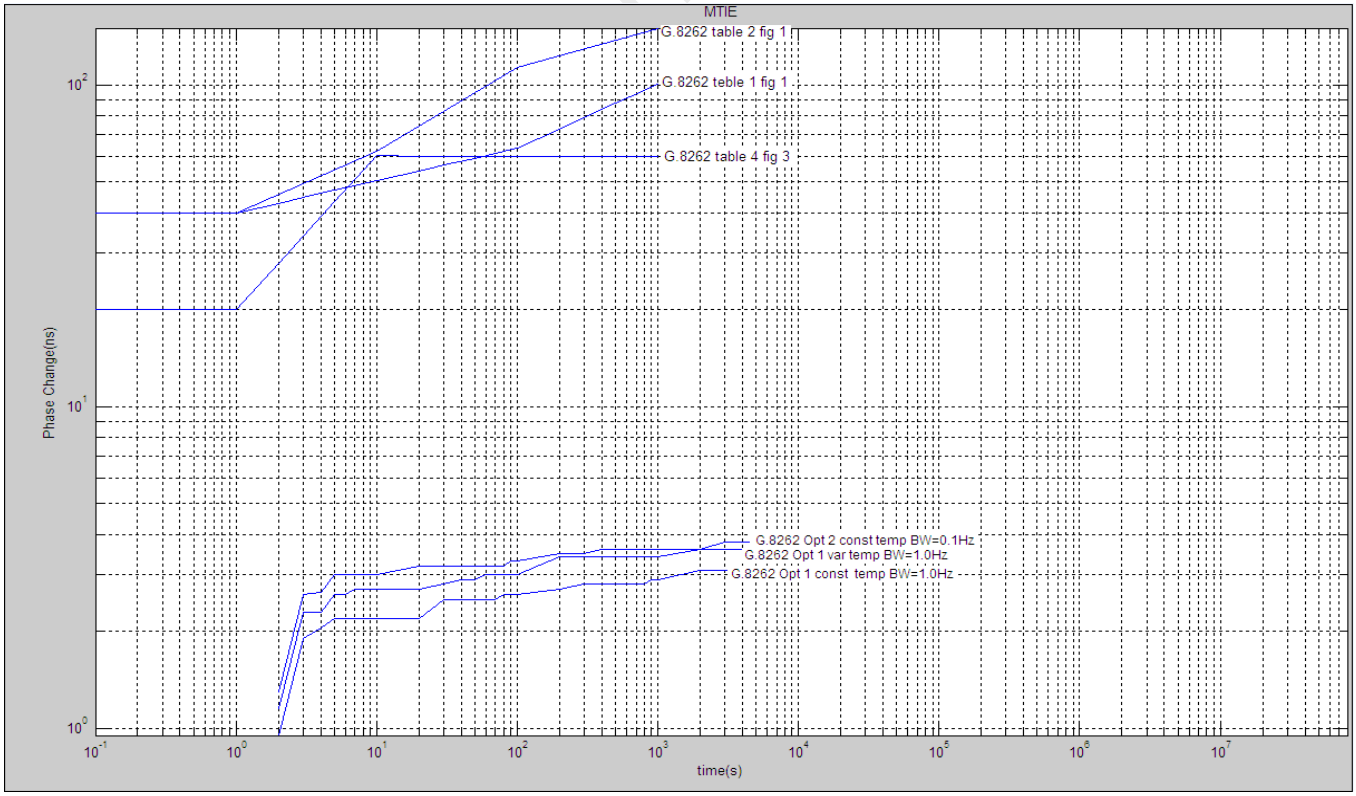
2、Test Standard

MTIE airflow=1m/s; Temp.gradient per GR-63 Table 4-4;@25℃.



TDEV airflow=1m/s;



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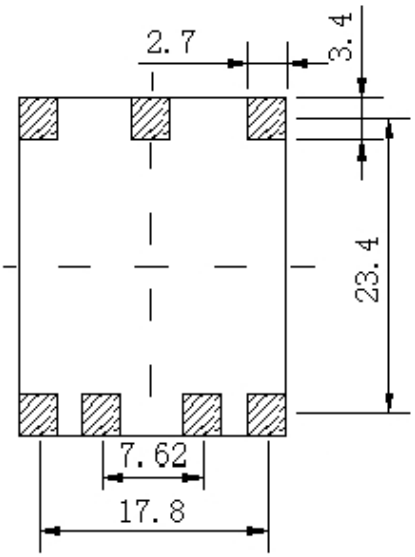
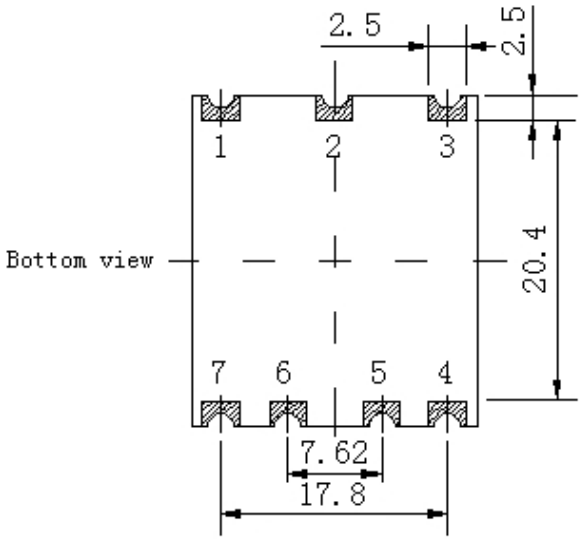
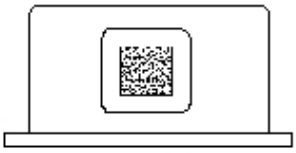
3、Mechanical Structure(mm)



Solder Pad layout

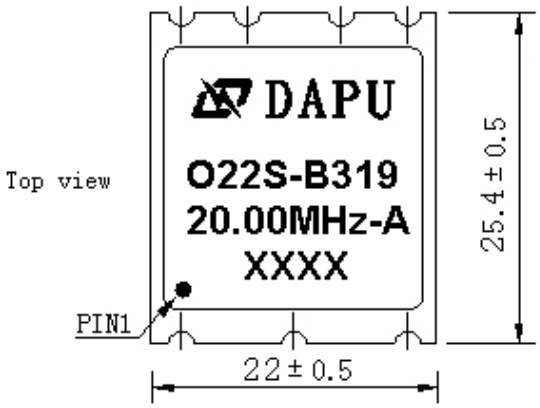




Right view

PIN FUNCTION

PIN	NOTATION	FUNCTION
1	NC	Not Connect
2	NC	Not Connect
3	VCC	Supply Voltage
4	OUTPUT	RF Output
5,6	NC	Not Connect
7	GND	GND



Note1: Tolerance ±0.2mm without mark

Note2: The first two xx representative: week
After two xx representative: year

Note3: Referential Weight 18g

Note4: NC is not connect

Note5: Material composition :
Pad/terminals：Cu （Surface plating: Ni 3-6um，Au 0.1～0.5um）
Base: High-TG FR4
Cover：Stainless steel

Note6: Sealed product , can be washed in water. After washing, bake 2 hours at 105℃.

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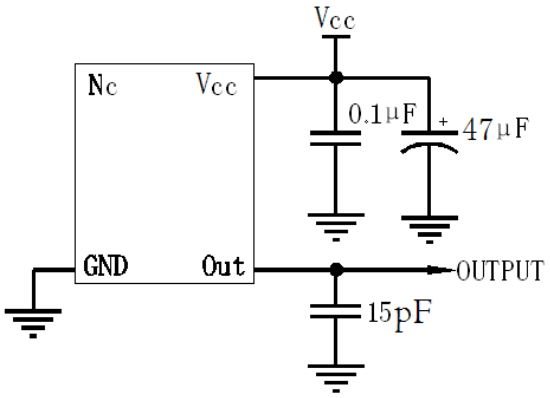
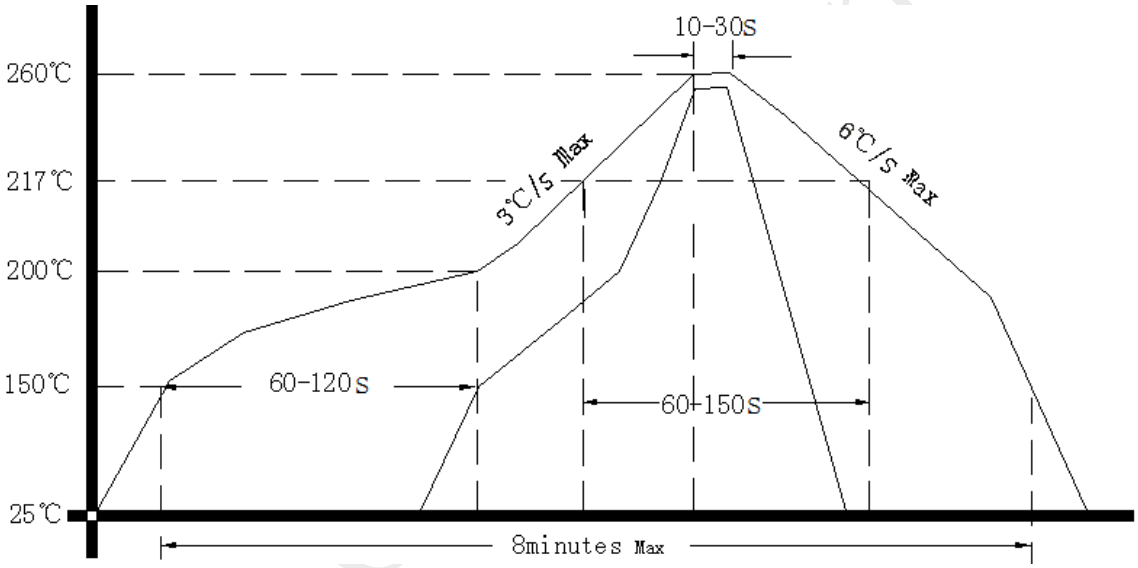
4、Test Circuit



5、Reflow Soldering Curve (RoHS)



6、Package（mm）